

User's Guide

SB16 PCI

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This product conforms to the following Council Directive:

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Introduction

Congratulations on your purchase of Creative Sound BlasterTM 16 PCI audio card. With its high-quality performance and low CPU utilization, Sound Blaster 16 PCI is the ideal choice for your personal computer.

Featuring 128-voice wave-table synthesis with very high sample rate converters, Sound Blaster 16 PCI ensures a high level of audio quality and performance. In addition, Sound Blaster 16 PCI supports localized three-dimensional sound immersion in headphone and two-speaker environments.

Sound Blaster 16 PCI also supports multiple algorithm levels of reverb and chorus effects on the wave-table sounds as well as spatial sound enhancement on MIDI and Wave sounds in two speakers. Full duplex operation also allows simultaneous audio recording and playback.

Sound Blaster 16 PCI's compatibility with Sound Blaster PCI ensures you of near perfect Sound Blaster compatibility on legacy applications.

Its use of the PCI bus and Plug and Play (PnP) technology helps make the Sound Blaster 16 PCI one of the easiest audio cards to install. We believe this Sound Blaster 16 PCI card will give you years of enjoyment of high-quality sound on your PC.

Checking System Requirements

Using This Guide

Getting More Information

Document Conventions

Your audio card requires at least:

- Pentium class 90MHz or 166MHz (recommended) computer with a free PCI slot
- 16 MB RAM (32 RAM recommended)
- Windows NT 4.0 or Windows 95/98
- Headphone or amplified speakers (Cambridge SoundWorks speakers recommended)

This guide explains the various hardware components on your audio card, and shows you how to install the card into your computer.

Refer to the online *Creative Audio Software User's Guide* for more information and instructions on how to use the various applications found in your package.

The following conventions are used throughout this document:

This	Represents
bold	Text that must be entered exactly as it appears.
<i>italic</i>	<i>Title of a book or a placeholder, which represents the information you must provide.</i>
UPPERCASE	DIRECTORY NAME, FILE NAME, OR ACRONYM.
< >	Symbols, letters, and key names on the keyboard.
	The notepad icon indicates information that is of particular importance and should be considered before continuing.

This	Represents
	The alarm clock designates a caution or warning that can help you avoid situations involving risk.

Preliminary Step for Windows 95 Users

If you are using Windows 95, you need to find your Windows' version number before you can proceed to the section "To Install Software in Windows 95/98" on page 5.

To find your Windows' version number:

1. Switch on your computer.
2. Click the Start button, point to Settings, and then click Control Panel.
3. In the Control Panel window, double-click the System icon.
Your Windows 95 version number is displayed in the General tabbed page of the Systems Properties dialog box.
4. Note the version number.

The following are possible Windows 95 version numbers:

- 4.00.950
- 4.00.950A
- 4.00.950B
- 4.00.950C

On the Audio Card



Jacks are one-hole connecting interfaces whereas connectors are multi-pin interfaces.

Your audio card has these jacks and connectors which allow you to attach other devices:

Line In jack (Blue)

Connects external devices such as cassette, DAT, or MiniDisc player for playback and recording.

Microphone In jack (Red)

Connects an external microphone for voice input.

Line Out jack (Green)

Connects headphones, powered speakers and an external amplifier.

Speaker Out jack (Black)

Connects headphones and non-powered speakers for audio output.

Joystick/MIDI connector

Connects a joystick or a MIDI device. You can buy an optional MIDI kit that allows you to plug in the joystick and the MIDI device simultaneously.

Telephone Answering Device/Modem connector

Connects a voice modem to transmit and receive audio signals.

CD Audio connector

Connects a CD-ROM drive using an MPC-3 CD audio cable.

AUX connector

Connects a TV card or second CD-ROM drive.

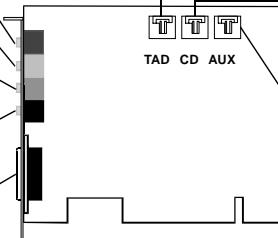


Figure 1: Jacks and connectors on your audio card.

To Install the Card and Related Hardware

1. Switch off your system and all peripheral devices, and then touch a metal plate on your computer to discharge any static electricity.
2. Unplug the power cord from the wall outlet.
3. Remove the cover of your computer to expose the motherboard and PCI slots.
4. Find an available PCI slot. Remove the cover plate at the back of the computer to create an opening for the audio card's jacks. Place the screw aside for later use.
5. Align your card's 32-bit slot connector with the expansion slot and press the card into the slot gently and evenly, with the external jacks facing the outside of the computer. Ensure that the bus connector has been pressed in as far as it will go and is sitting firmly inside the expansion slot.

6. Plug the CD-ROM audio cable into the CD Audio connector and plug the speakers into the Front Line Out/Speaker Out jack (see Figure 1). Make any other internal connections applicable for your computer, including modem or video card connections.
7. Replace the computer cover and plug all components back into their respective outlets. You may now start the computer.

To Install Software in Windows 95/98

- To Install Audio Drivers
 - For Windows 95 Version (4.00.950/A)
 - For Windows 95 Version (4.00.950B/C)
 - For Windows 98
- To Install Applications
- To Test the Installation
- To Uninstall Sound Blaster 16 PCI

Note: When you start your computer after installing the audio card, Windows 95/98 automatically detects the audio card installed in your computer.

To Install Audio Drivers

For Windows 95 Version (4.00.950/A)

1. In the audio card's New Hardware Found dialog box, select the Driver From Disk Provided By Hardware Manufacturer option and click the OK button.
2. Insert the installation CD into the CD-ROM drive.
3. In the Install From Disk dialog box, type **D:\AUDIO\Language\WIN95DRV** (where D: represents your CD-ROM drive and *Language* represents the language of the software that you want to install) and then click the OK button.
4. Follow the instructions on the screen to complete the audio driver installation.

For Windows 95 Version (4.00.950B/C)

1. Insert the installation CD into the CD-ROM drive.
2. In the Update Device Driver Wizard dialog box, click the Next button.
3. Click the Other Locations option.
4. Type the path or click the Browse button to select the path of the drivers' location (that is, **D:\AUDIO\Language\WIN95DRV**, where D: represents your CD-ROM drive and *Language* represents the language of the software that you want to install) and then click the OK button.
5. Click the Finish button.
If the system prompts you for the installation CD again, click the OK button and repeat from Step 4.
The audio drivers are copied to your system.

For Windows 98

1. Insert the Sound Blaster 16 PCI installation CD and click the Next button.
2. Select the Search For The Best Driver For Your Device (Recommended) option and click the Next button.
3. Clear all check boxes and check only the Specify a Location check box. Type or click the Browse button and point to the path of the drivers' location (that is, **D:\AUDIO\Language\WIN95DRV**, where D: represents your CD-ROM drive and *Language* represents the language of the software that you want to install) and click the Next button.
4. Click the Next button to install the Windows 98 drivers.
5. Click the Finish button to complete the installation.

To Install Applications

1. Insert the installation CD into the CD-ROM drive
2. The Sound Blaster 16 PCI installation screen will appear. Otherwise, double-click the My Computer icon on your Windows Desktop, then double-click on your CD-ROM drive icon.
3. Select the applications you want to install and click the OK button.
4. Follow the instructions on screen to complete the installation.
5. Restart your system when prompted.

To Test the Installation

After the drivers are installed, you can use Windows 95/98 Media Player to test whether your audio card is working properly.

1. Click the Start button, point to Programs, point to Accessories, point to Multimedia (for Windows 98, choose Entertainment), and then click Media Player.

The Media Player appears as shown in Figure 2.

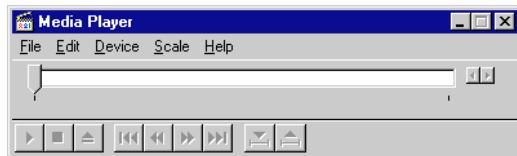


Figure 2: The Media Player Interface

2. On the Device menu, click Sound.
3. In the Open dialog box, select a sound file from the list, and then click the Open button.
4. On the Media Player, click the Play button. You should hear the selected sound being played. If you encounter any problems, consult the “Troubleshooting in Windows 95/98” section of the online *Creative Audio Software User’s Guide*.

To install Media Player

If you do not have Windows 95/98 Media Player, follow these steps to install it.

1. Click the Start button, point to Settings, and then click Control Panel.
2. In the Control Panel window, double-click the Add/Remove Program icon.
3. Click the Windows Setup tab.
4. Select the Multimedia check box, and then click the Details button.
5. In the Multimedia dialog box, select the Media Player check box, and then click the OK button.
6. Follow the instructions on the screen to complete the installation.

To Uninstall Sound Blaster 16 PCI

1. Click the Start menu, point to Settings and click Control Panel.
2. Double-click the Add/Remove Programs icon.
3. On the Install/Uninstall tabbed page, select Sound Blaster 16 PCI.
4. Click the Add/Remove button, and then click the Yes button when prompted to remove the software.

To Install Software in Windows NT 4.0

- To Install Audio Drivers
- To Test the Installation
- To Uninstall Sound Blaster 16 PCI
- To Reinstall the Audio Drivers From the Installation Disc
- A Windows NT 4.0 Service Control Manager error message appears...

1. Insert the installation CD into your CD-ROM drive.
The installation screen appears.
2. Follow the instructions on the screen to complete the installation.

To Install Audio Drivers

To Test the Installation

You may run a simple application to test the card's MIDI and Wave sound playback. This ensures that the card is properly installed and that there are no conflicts in the IRQ, DMA, or I/O settings.

1. In the Start menu, point to Programs, point to Accessories, point to Multimedia, and then click Media Player.
2. On the File menu, click Open.
3. Browse to any folder that contains a file with the extension .WAV. Select the file and click the Open button. Click the Play button to play the file.

To Uninstall Sound Blaster 16 PCI

1. Click the Start button, point to Settings and click Control Panel. Double-click the Multimedia icon.
2. From the Audio Devices tabbed page, select any existing audio devices and then click Remove. Click Yes when prompted to remove the driver.
3. Close the Multimedia Properties window and restart your computer.

To Reinstall the Audio Drivers From the Installation Disc

If you think the audio drivers are corrupt, follow these steps to reinstall them.

1. Insert the installation CD into your CD-ROM drive.
2. Run the UPDPCINT.EXE program from the **D:\AUDIO\Language\NT4DRV** folder, where D: represents your CD-ROM drive and *Language* represents the language of the software that you want to install.
A brief message appears. Then the pointer returns to its normal shape, indicating that the update is complete.

A Windows NT 4.0 Service Control Manager error message appears...

If one or more error messages appear at system restart, it is because you removed an audio card from your computer after you have successfully installed the Sound Blaster 16 PCI card. The drivers of the removed audio card cannot locate the card in your system.

To solve this problem:

1. Log on to your computer as Administrator.
2. Click the Start button, point to Settings, and then click Control Panel.
3. Double-click the Multimedia icon, and then click the Devices tab.
4. In the list, under these entries
 - Audio Devices
 - MIDI Devices And Instrumentsremove all items except:
 - Audio for Sound Blaster 16 PCI
 - MIDI for Sound Blaster 16 PCI

5. Click the OK button to close the dialog box.

The drivers are removed.

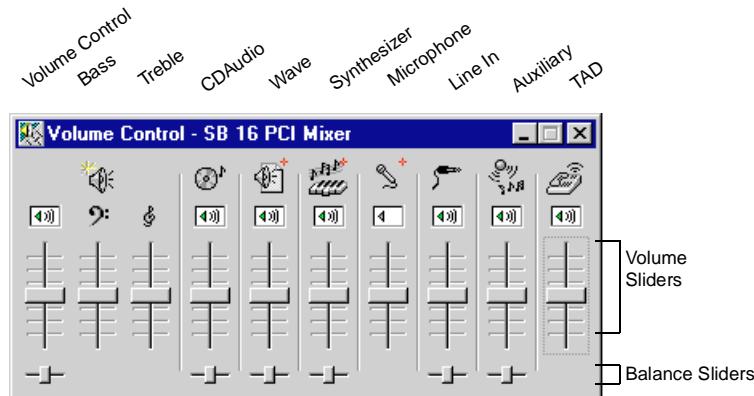
Applications

The Sound Blaster 16 PCI card is supported by a range of applications to help you get the absolute most from the audio card. Some of the more important applications are:

- Creative Mixer
- Creative WaveStudio
- Soundo'LE
- Creative Keytar

Creative Mixer

Creative Mixer allows you to control, combine, and manipulate sound from various audio sources. You can control the volume of an audio source while running other Windows applications, and select and mix different audio sources during playback and recording.



Creative WaveStudio

See the online help file for instructions on

- Basic tasks
- Customizing the view
- Using advanced controls
- Mixing, Recording and Playback, recording from a single and multiple sources and creating effects

WaveStudio is a Windows-based application that allows you to perform the following sound editing functions easily:

- Play, edit, and record 8-bit (tape quality) and 16-bit (CD quality) Wave data. Enhance your Wave data or create unique sounds with various special effects and editing operations such as rap, reverse, echo, mute, pan, cut, copy, and paste.
- Open and edit several Wave files at the same time.
- Import and export raw (.RAW) data files.

See the online help file for details.

Soundo'LE (for Windows 95/ 98 only)

Creative Soundo'LE plays and records Wave (.WAV) data, and supports Object Linking and Embedding (OLE) 2.0. In the online help file, learn to:

- Work with Wave files
- Embed a Wave file

Creative Keytar

With Creative Keytar, an easy-to-use and highly interactive education and entertainment software for beginners, you can turn your multimedia computer into a virtual rhythm guitar system immediately. Click a picture at the top of the screen to choose your favorite guitar. Press a function key (F1, ..., F12) to activate a chord, and you can start strumming or plucking your favorite tune, all in a matter of seconds or minutes.

General Specifications

Wave-table Synthesis

- Creative synthesis engine
- Digital effects engine for reverb and chorus
- 128-voice polyphony and multi-timbral capability
- 16 MIDI channels, 128 GM and GS compatible instruments and 10 drum kits
- MT-32 compatible instrument set
- 2MB, 4MB and 8MB sample sets included

3D Audio Technology

- Support for Microsoft DirectSound and DirectSound3D and Creative Environmental Audio Extensions (EAX) audio technologies in two-speaker mode
- Localized 3D Sound technology expands the spaciousness of sounds in the traditional two speaker system
- Multi-Algorithm reverb and chorus

Memory Subsystem

- Utilizes system RAM for wave-table samples
- User configurable for 2MB, 4MB or 8MB

CD-Quality, 16-Bit Stereo Digital Audio

- 8-bit and 16-bit mono and stereo recording and playback
- User-selectable sample rates from 5 kHz to 48 kHz
- Full-duplex support enables simultaneous record and playback for Internet communications software

MIDI Interface/ Joystick Port

- Built-in 15-pin MIDI interface (cable available separately)
- Compatible with Sound Blaster and MPU-401 UART modes
- IBM-compatible 15-pin joystick port with analog support

On Board Connectors

- Line In
- Microphone In
- Line Out
- Speaker Out
- MIDI/Joystick port
- Telephone Answering Device In/Out
- MPC-3 CD Audio In
- Auxiliary In

Works With The Following Standards

- Windows 95/98
- Windows NT 4.0
- General MIDI
- MPC-3
- Plug-and-Play
- Sound Blaster PCI
- Microsoft DirectSound, DirectSound3D
- Creative EAX